

*A Manual*  
*of*  
**STANDARD  
CONSTRUCTION**  
*for*  
**STOCK:SASH  
DOORS *and* FRAMES**

# NATIONAL DOOR MANUFACTURERS ASSOCIATION, INC.

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and  
919-17th Street, Northwest, Washington, D.C.

## FOREWORD

**THE ASSOCIATION**—The Roster of the National Door Manufacturers Association consists of the country's largest producers of Ponderosa Pine Sash, Doors, and Frames and Hardwood Veneered Doors (see back cover). Through several generations of service to the construction industry, these national producers have developed standards of design, construction, and quality which assure to their users a maximum of utility, beauty, availability, and economy not only in first cost but in maintenance.

**THE PURPOSE OF THIS CATALOG**—The purpose of this catalog is to set forth clearly both in detail and specification the essential data and information regarding these products as they are manufactured in large quantities for the building trade. The details shown provide for variations in the width and thickness of some members. The variations in widths represent the differences established by common practice in various geographical centers. Minimum thicknesses are shown throughout, but the majority of items will actually finish  $\frac{1}{2}$  inch thicker after sanding than shown on the details.

**THE ADVANTAGES OF STOCK WINDOWS AND DOORS**—In serving and protecting the best interests of his clients, it is the aim of every Architect and

Builder to avail himself of every logical economy which does not sacrifice quality. In no way can this be better accomplished than in acceptance and use of standardized (stock) products. Stock windows, doors, and frames as distinguished from products of costly, time-consuming special design and construction, have the following definite advantages in their favor:

(1) **Lower Cost**—Made on a quantity production basis from time-tried designs which have proven their economies in utilization of available stock lumber dimensions and species, specialized machine operations, and ease in distributing, warehousing, and marketing.

(2) **Availability**—Stock windows, doors, and frames are available for immediate delivery in all localities nationally. The same designs and quality are obtainable at the smaller country lumber and millwork distributing yards as are obtainable in the metropolitan centers.

(3) **Standardization**—The national standards of design and quality are adhered to rigidly.

(4) **Adaptability**—They are adapted to all types of construction and architectural design, and, by varied methods of installation and arrangement, may be used to produce special effects at a minimum of cost.

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# WHY WOOD SASH and FRAMES ARE BEST

1. They have proved their genuine merit, and long ago passed the experimental stage. Millions of installations of a generation ago are good today.
2. Except for a very small percentage, all windows and frames in use today are made of wood.
3. Both initial cost and upkeep of wood sash are low.
4. Wood sash and frames give satisfactory service with a minimum of attention.
5. They stand up in salt water atmosphere.
6. Wood windows are easy to operate and are not likely to get out of order or refuse to open or close when quick action is desirable.
7. Glass is vibrant and noisy but when set in wood sash will not be annoying in the least.
8. When misalignment occurs due to settling of the building, wood sash are easily and quickly refitted to again operate smoothly.
9. Wood sash repairs or replacements are simply made and can be done by local craftsmen quickly available.
10. Wood is one of the best insulators known against heat and cold.
11. Wood sash can be weatherstripped effectively at very little cost.
12. The construction of wood frames for wood sash accommodates screens and storm sash and without any additional framing expense.
13. The importance of screens is known to everyone and storm sash are absolutely essential if proper humidity is to be maintained during the heating season. It is likely that in a very few years most heating systems will be provided with proper humidification. Storm sash prevent condensation on the inside glass surface and permit maintenance of uniform and higher humidities in buildings in winter. Storm sash cut in half the heat loss directly through the glass, thus saving fuel, making room temperatures more uniform, avoiding drafts, and increasing comfort.
14. Condensation of moisture does not occur on wood. Therefore, wood sash and frames do no damage to costly draperies and curtains.
15. Fire damage results from the cracking of glass due to the heat of the blaze regardless of whether the glass is set in a wood or metal frame. Even wire glass is not proof against such damage.
16. In case of a bad fire, wood sash and frames, if they do not burn out clean, are quickly removed for replacement work.
17. Wood sash and frames withstand to a satisfactory degree the action of the condensation of acid fumes and charcoal fumes which occur in the processes of certain industries.
18. Wood windows are very attractive in appearance. The depth of the wood members produces shadow lines which add character to the windows, thus avoiding that "factory" or "commercial" appearance.
19. The use of wood sash and frames permits the use of good-looking, comfortable appearing trim of wood which will take a variety of finishes to suit the individual taste and interior treatment.
20. Wood admits of ready attachment of shade rollers and additional hangings.
21. Wood sash and frames do not stain rain water or cleaning water which in turn may run down and discolor the building surface, nor is wood attacked chemically by strong soaps or alkaline cleaning fluids.
22. Wood sash do not require building the home to fit the sash—they are built to fit the home.
23. A great variety of sizes and shapes is available in wood sash. Standard wood sash may be had double hung, in single units, in pairs, in groups, to swing in or out, or to pivot, and in any design required to harmonize with the architecture of the building.
24. The layout and design of wood sash and size of their members may be altered to suit any choice or purpose. Circular, gothic, elliptical, tudor, or any other irregular head design as well as any desired arrangement of division bars are obtainable in wood sash at reasonable cost.

## WINDOW OPENING SIZES

The following amounts are added to Glass Sizes to determine finished Window Opening Sizes

MARKET	1 3/8 and 1 3/4 2 Light Wds.		1 3/8 and 1 3/4 4 Light Wds.		1 3/8 and 1 3/4 8 Light Wds.		MARKET	1 3/8 and 1 3/4 12 Light Wds.		1 1/8 8 Light Wds.		1 1/8 12 Light Wds.	
	Width	Length	Width	Length	Width	Length		Width	Length	Width	Length	Width	Length
Boston.....	3 5/8	5	3 5/8	5	3 5/8	5	Boston.....	3 5/8	5	3 5/8	5	3 5/8	5
New York.....	4	6	4	6	4	6	New York.....	4	6	4	6	4	6
Western.....	4	6	5	6	5	6	Western.....	4 1/2	6	4 1/2	6	4	6
Ohio.....	4 1/2	6 1/8	4 1/2	6 1/8	4 1/2	6 1/8	Ohio.....	4 1/2	6 1/8	4 1/2	6 1/8	4 1/2	6 1/8
Washington (*)....	4 1/2	6 1/4	*4 1/2	6 1/4	*4 1/2	6 1/4	Washington (*)....	4 1/2	6 1/4	*4 1/2	6 1/4	4 1/2	6 1/4
Baltimore (*).....	4 1/2	6 1/4	*4 1/2	6 1/4	*4 1/2	6 1/4	Baltimore (*).....	4 1/2	6 1/4	*4 1/2	6 1/4	4 1/2	6 1/4
Philadelphia.....	4 5/8	6 1/2	4 5/8	6 1/2	4 5/8	6 1/2	Philadelphia.....	4 5/8	6 1/2	4 5/8	6 1/2	4 5/8	6 1/2
Indianapolis.....	5	6 1/2	5	6	5	6	Indianapolis.....	4 1/2	6	4 1/2	6	4	6
Wilkes-Barre.....	5	6	5	6	5	6	Wilkes-Barre.....					5	6
Southern.....	5	6	5	6	5	6	Southern.....					5	6

(\*) NOTE: There are exceptions to the above layout on 4 and 8 light Baltimore and Washington sizes. On 4 and 8 Light Windows 13" and 14 1/2" wide, allow 5 1/2" for wood. On 4 Light Windows 14" wide, allow 5" where opening is 2' 9" and 6 1/4" where opening is 2' 10 1/2". 13 1/4", 13 1/2", and 15" are not regular stock sizes. Where these layouts are ordered, a definite understanding as to width of stiles and muntins should be reached.

NOTE: Sizes of stiles and rails in all Markets may vary slightly with the different manufacturers, but the finished opening or overall size of window is essentially the same in all cases.

## EXPLANATION OF SCHEDULE

### OPENING SIZE OF 2 LIGHT WINDOW IN VARIOUS MARKETS

Glass Size	Boston	New York	Western	Ohio
24"x24"	2'3 5/8"x4'5"	2'4"x4'6"	2'4"x4'6"	2'4 1/2"x4'6 1/8" Etc.
24"x26"	2'3 5/8"x4'9"	2'4"x4'10"	2'4"x4'10"	2'4 1/2"x4'10 1/8" Etc.

### OPENING SIZE OF 4 LIGHT WINDOW IN VARIOUS MARKETS

Glass Size	Boston	New York	Western	Ohio
12"x24"	2'3 5/8"x4'5"	2'4"x4'6"	2'5"x4'6"	2'4 1/2"x4'6 1/8" Etc.
12"x26"	2'3 5/8"x4'9"	2'4"x4'10"	2'5"x4'10"	2'4 1/2"x4'10 1/8" Etc.



# Specifications

• • •

## STOCK WINDOW FRAMES and SASH

**NOTE:** Notes are explanatory or advisory only and should not be included in the specifications.

**NOTE:** Select and include only those clauses which apply to the particular work. Words within brackets in italics are selective.

### (1) MATERIAL

(1a) All window frames and sash shall be made of Ponderosa Pine selected for straightness and in strict accordance with the grading rules of the National Door Manufacturers Association, Inc.

(1b) Lumber shall be dried to a moisture content of from 8 to 10 per cent before fabrication.

(1c) Frames shall be Grade "A" Quality.

(1d) Sash shall be First Quality.

**NOTE:** See Grading Rules, page 10.

### (2) FRAMES

(2a) Window frames shall be of stock design, construction, and dimensions in accordance with the standard details of the National Door Manufacturers Association, Inc.

(2b) Frames shall be delivered (*knock down*) (*completely erected*) (*except for application of*) (*exterior trim*) (*staff beads*).

**NOTE:** Sill pitch varies from 1½ to 3 inches per foot with different manufacturers—can be made to any pitch specified. In masonry wall frames, sills are customarily dadoed to receive jambs, whereas in frame wall frames the jambs are dadoed to receive the sills.

*Inside stops and extension jambs are not considered parts of exterior frame.*

### (3) SASH

(3a) Window sash shall be of stock design and dimensions in accordance with the standard details of the National Door Manufacturers Association, Inc. They shall be (1½) (1¾) (1¾) (*specify*) inch thick. A "thickness tolerance" not exceeding ⅛ inch less than the nominal thickness will be allowed.

**NOTE:** Sash can also be made ¾, 2¼, and 2½ inch thick.

(3b) Sash shall be constructed, at the manufacturer's option, "mortised and tenoned" or "slot mortised."

(3c) Tenons shall be approximately three-quarters of the rail

width. Sash shall be well clamped together and all tenons carefully pinned on the outside face with barbed steel pins set through tenons and countersunk.

(3d) The stiles of all double hung check rail windows shall be plowed and bored for sash cord attachment.

**NOTE:** Plain rail window sash are not plowed and bored.

(3e) Both sides of all sash including the top face of bottom sash check rail shall be machine sanded.

(3f) Bottom rails shall be rabbetted.

**NOTE:** Bottom rails are not rabbetted unless so specified.

(3g) Furnish wood glass stops where sash are not putty glazed.

### (4) PRIMING

**NOTE:** Unless otherwise specified, frames and sash are delivered unprimed in the white. A suitable priming will check moisture content changes to such an extent as to largely overcome swelling and subsequent shrinking after installation.

(4a) All (*frames*) (*and*) (*sash*) shall be primed before delivery.

(4b) All (*frames*) (*and*) (*sash*) shall be dip treated (*with a weather resisting solution*) (*specify treatment*).

(4c) Priming coat shall consist of (*lead and linseed oil*) (*zinc, lead, and linseed oil*) (*high grade mixed paint*) (*reduced in accordance with the manufacturer's direction for first or priming coat work*).

(4d) The runs of frames and the edges of sash shall be thoroughly primed with raw linseed oil or liquid paraffine.

(4e) Sash primed before fitting shall have the exposed parts reprimed particularly under countersunk hardware.

### (5) GLAZING

**NOTE:** Unless otherwise specified, glass is set with zinc points and high grade putty.

(5a) All sash unless otherwise specified shall be glazed with (SS) (DS) grade (A) (B) (*specify make*) (*flat drawn*) sheet glass.

**NOTE:** Note exceptions to above, if any.

**NOTE:** Unless otherwise specified, sash are furnished glazed in "B" or "Standard Glazing" quality.

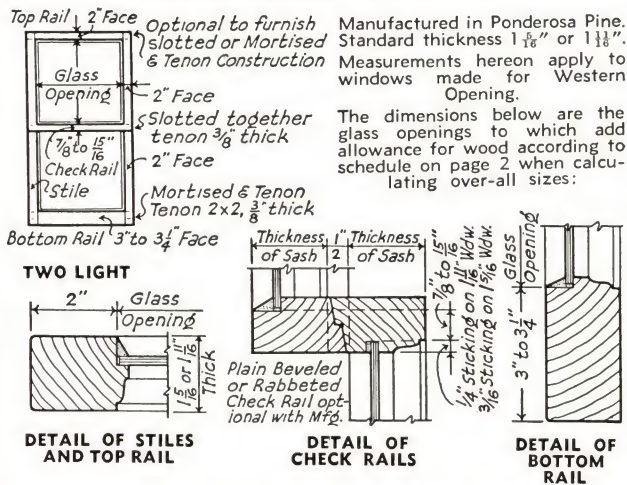
## SHORT FORM

All stock window frames and sash shall be made in accordance with the standard specifications of the National Door Manufacturers Association, Inc. as filed in Sweet's Catalog File—Architectural.

Sash shall be (*specify*) thick.

# CONSTRUCTION DETAILS

## DOUBLE HUNG WINDOWS



SINGLE STRENGTH GLASS—GRADE "B"		
16"x20"	18"x24"	20"x24"
16"x24"	18"x26"	20"x26"
16"x28"	18"x28"	20"x28"
18"x20"	20"x20"	
DOUBLE OR SINGLE STRENGTH GLASS—GRADE "B"		
24"x20"	24"x30"	28"x26"
24"x24"	26"x24"	28"x28"
24"x26"	26"x26"	28"x30"
24"x28"	26"x28"	30"x30"
	26"x30"	

Generally stocked in S.S. glass but can be furnished with glass as desired.

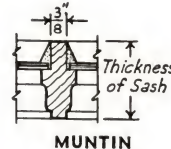
## DIVIDED TOP WINDOWS

Layout, size of stiles and rails, also glass sizes for 2 light windows apply for all divided top windows.



### NOTE:

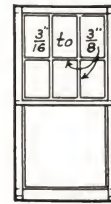
In some Mills, windows and sash are carried in stock with O.G. sticking as shown while others carry same with Ovolo sticking. Therefore, when strictly stock windows are wanted, sticking will be optional with manufacturer.



MUNTIN



MUNTIN

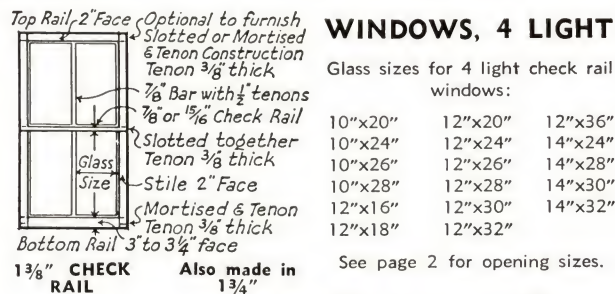


SIX LIGHT TOP

See page 6 for other divisions in top sash.

The sizes of stiles, rails, etc. as made by the different manufacturers vary slightly as noted on elevations, but in all cases the finished opening size is the same, i. e., for 2 light Western Openings, all finished openings are 4" wider and 6" higher than glass openings ordered.

See page 2 for allowance over glass size for openings in other markets.



## WINDOWS, 4 LIGHT

Glass sizes for 4 light check rail windows:

10"x20"	12"x20"	12"x36"
10"x24"	12"x24"	14"x24"
10"x26"	12"x26"	14"x28"
10"x28"	12"x28"	14"x30"
12"x16"	12"x30"	14"x32"
12"x18"	12"x32"	

See page 2 for opening sizes.

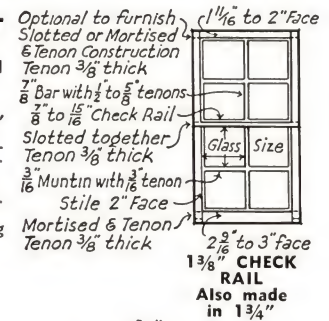
## WINDOWS, 8 LIGHT

Glass sizes for 8 light check rail windows:

8"x10"	10"x14"	12"x16"
9"x12"	10"x16"	.....
10"x12"	12"x14"	

See page 2 for opening sizes.

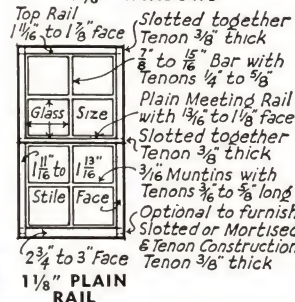
Finished thickness after sanding  $1\frac{1}{16}$ " or  $1\frac{1}{8}$ ".



## 4 LIGHT AND 8 LIGHT WINDOWS:

All manufactured in Ponderosa Pine with glass as desired. Finished thickness  $1\frac{1}{16}$ ",  $1\frac{1}{8}$ ", and  $1\frac{1}{4}$ " after sanding. Measurements shown apply to windows made for Western Openings. See page 2 for opening sizes for all markets.

Glass sizes for 4 light plain rail windows: 12"x20", 12"x24".



Glass sizes for 8 light plain rail windows:

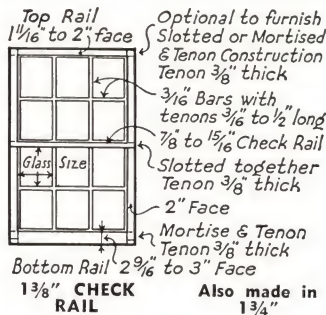
8"x10"	10"x12"	12"x14"
9"x12"	10"x14"	12"x16"

See page 2 for opening sizes.

Finished thickness after sanding  $1\frac{1}{16}$ ".



# CONSTRUCTION DETAILS



## WINDOWS, 12 LIGHT

Glass sizes for 12 light check rail windows:

8"x10"	10"x12"	12"x14"
8"x12"	10"x14"	12"x16"
9"x12"	10"x16"	12"x18"
9"x14"	.....	.....

See page 2 for opening sizes.  
Finished thickness after sanding 1 1/8" or 1 1/4".

## TWELVE LIGHT WINDOWS

All manufactured in Ponderosa Pine with glass as desired. Standard thickness 1 1/8", 1 1/4", and 1 1/2" after sanding. Measurements shown apply to windows made for Western Openings. Opening sizes for all markets scheduled on page 2. See page 4 for sections of windows.

Glass sizes for 12 light plain rail windows:

8"x10"	9"x12"	10"x12"
8"x12"	9"x14"	10"x14"
.....	.....	10"x16"

See page 2 for opening sizes.  
Finished thickness after sanding 1 1/8".



## SASH

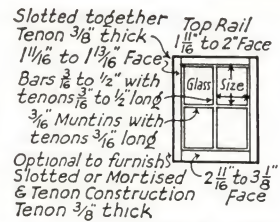
### 4 LIGHT 1 1/8" and 1 3/8"

Glass Sizes:

8"x10"	10"x10"	10"x14"	12"x12"
9"x12"	10"x12"	10"x16"	12"x14"
9"x14"	.....	.....	12"x16"

For Western Opening, add 4" in width and 5" in height to glass openings.

Finished thickness after sanding 1 1/8" and 1 3/8".



### FOUR LIGHT

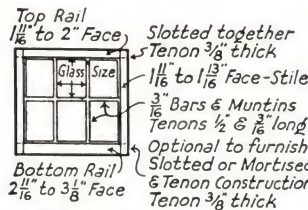
### 6 LIGHT 1 1/8" and 1 3/8"

Glass Sizes:

8"x10"	9"x12"	10"x12"	10"x14"
.....	.....	.....	10"x16"

For Western Opening, add 4" in width and 5" in height to glass openings.

Finished thickness after sanding 1 1/8" and 1 3/8".



### SIX LIGHT

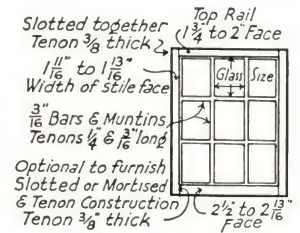
### 9 LIGHT 1 1/8" and 1 3/8"

Glass Sizes:

8"x10"	9"x12"
--------	--------

For Western Opening, add 4" in width and 5" in height to glass openings.

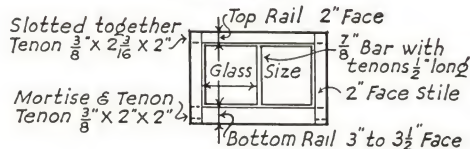
Finished thickness after sanding 1 1/8" and 1 3/8".



### NINE LIGHT

## CELLAR SASH

### 1 1/8" and 1 3/8"



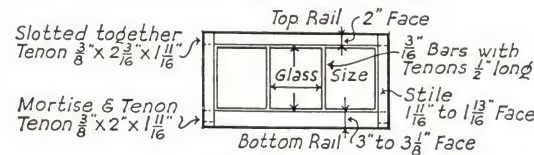
### TWO LIGHT

Glass sizes for 2 light cellar sash:

10"x12"	12"x12"	12"x18"	14"x16"
10"x14"	12"x14"	12"x20"	14"x18"
10"x16"	12"x16"	12"x24"	14"x20"

For Western Opening, add 5" in width and 5" in height to glass openings.

Finished thickness after sanding 1 1/8" and 1 3/8".



### THREE LIGHT

Glass sizes for 3 light cellar sash:

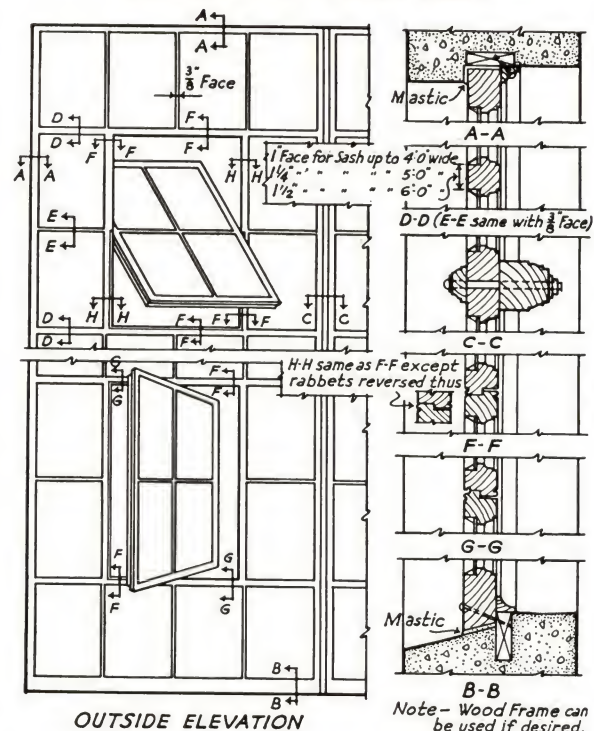
7"x9"	9"x14"	10"x14"	12"x14"
8"x10"	9"x16"	10"x16"	12"x16"
9"x12"	10"x12"	10"x18"	.....

For Western Opening, add 4" in width and 5" in height to glass openings.

Finished thickness after sanding 1 1/8" and 1 3/8".

Cellar sash manufactured in Ponderosa Pine with glass as desired.

## INDUSTRIAL WOOD SASH



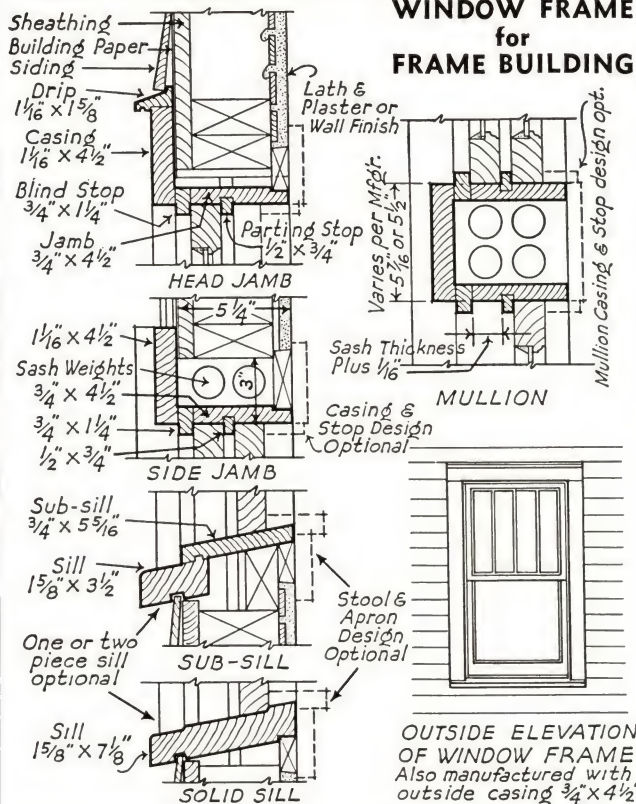
### OUTSIDE ELEVATION

Note - Wood Frame can be used if desired.

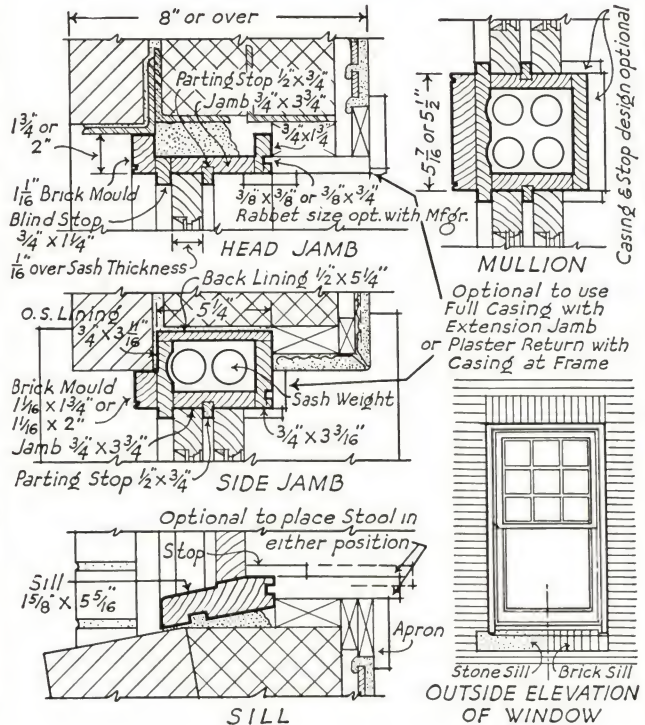


# WINDOW and DOOR FRAME DETAILS

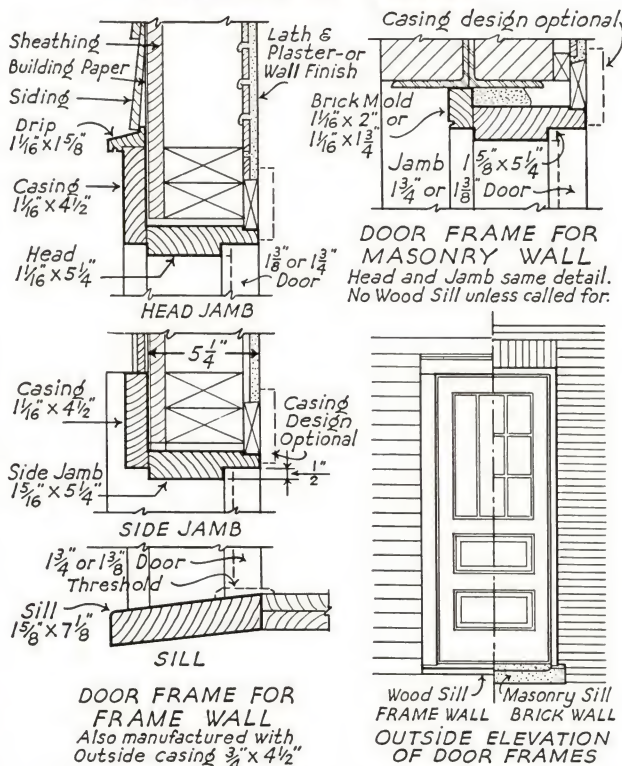
## WINDOW FRAME for FRAME BUILDING



## WINDOW FRAME FOR BRICK BUILDING



## OUTSIDE DOOR FRAMES



**NOTE:** In these frame details "butt-joints" are shown between outside casings and blind stops, and between blind stops and jambs. "Tongued and Grooved" joints are optional with manufacturer and will be furnished by all manufacturers when specified.

## DETAILING SPECIAL FRAMES

In detailing frames, economy in construction without loss in effect will be promoted if the standard sizes of lumber, especially thicknesses, are adhered to closely. Kiln dried frame material up to 2 inches (rough), which will finish up to  $1\frac{5}{8}$  inches in thickness, is usually carried in stock. If thicker stock is required, it usually has to be cut and dried to order which requires more time and increases production costs materially. If frame members thicker than  $1\frac{5}{8}$  inches are required, it is recommended that millwork plants be given the option of supplying them in built-up form. This form of construction is considered to be as good as that calling for use of one large piece. Granting this privilege may simplify a job for a millwork plant with no resultant loss in construction value.

Recommended thicknesses for pulley stiles or jambs are  $\frac{3}{4}$  and  $1\frac{1}{8}$  inch.

Recommended thicknesses for rabbeted jambs are  $1\frac{5}{8}$  and  $1\frac{7}{8}$  inches.

Recommended thicknesses for sills is  $1\frac{5}{8}$  inches. The appearance of greater thickness, when this effect is desired for purposes of design, may be produced by beveling the front side of the sill.



# Specifications

## STOCK SOLID DOORS and FRAMES

**NOTE:** Notes are explanatory or advisory only and should not be included in the specifications.

**NOTE:** Select and include only those clauses which apply to the particular work. Words within brackets in *italics* are selective.

### (1) MATERIAL

(1a) All solid doors and frames shall be made of Ponderosa Pine selected for straightness and in strict accordance with the Grading Rules of the National Door Manufacturers Association, Inc.

(1b) Lumber shall be dried to a moisture content of from 8 to 10 per cent before fabrication.

(1c) Frames shall be Grade "A" Quality.

(1d) Doors shall be (First) (Second) (Third) Quality.

**NOTE:** See grading rules, page 10.

### (2) FRAMES

(2a) Door frames shall be of stock design, construction, and dimensions in accordance with the standard details of the National Door Manufacturers Association, Inc.

(2b) Frames shall be delivered (*knock down*) (*completely erected*) (*except for application of*) (*exterior trim*) (*staff beads*).

**NOTE:** Unless otherwise specified, sills for door frames are furnished in Pine.

(2c) Sills for door frames shall be clear (Pine) (Oak).

### (3) DOORS

(3a) Doors shall be of stock design and dimensions in accordance with the standard details of the National Door Manufacturers Association, Inc. They shall be ( $1\frac{3}{8}$ ) ( $1\frac{3}{4}$ ) (*specify*) inch thick. A "thickness tolerance" not exceeding  $\frac{1}{8}$  inch less than the nominal thickness will be allowed.

**NOTE:** Doors can also be made  $\frac{3}{4}$ ,  $1\frac{1}{8}$ , and  $2\frac{1}{4}$  inch thick.

(3b) Stiles and rails shall have (*specify type*) solid sticking with solid raised panels. All intersections shall be coped with joints well fitted.

**NOTE:** Unless otherwise specified, stock doors are assembled with hardwood dowels extended into stiles and rails approximately one half the width of the stiles.

(3c) Doors shall be (*describe panel arrangement including glazing requirements*).

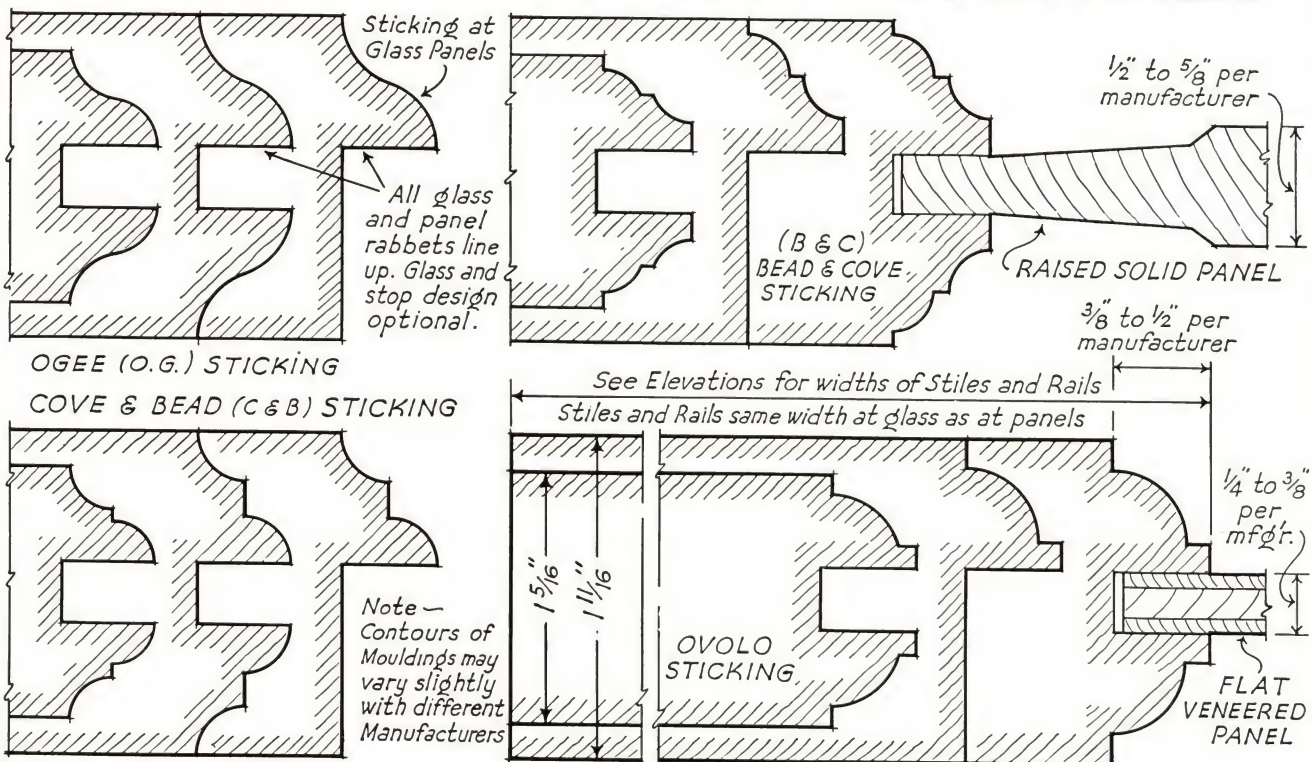
**NOTE:** Unless otherwise specified, glass stops are furnished for all glazed doors. Faces of all doors are machine sanded.

## SHORT FORM

All stock solid doors (and frames) shall be made in accordance with the standard specifications of the National Door Manufacturers Association, Inc. as filed in Sweet's Catalog File—Architectural.

Doors shall be (*specify*) thick.

## STANDARD TYPES OF DOOR STICKING and PANELS

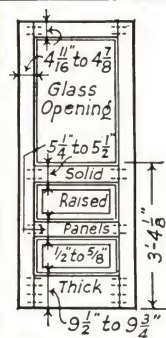




# CONSTRUCTION DETAILS

## EXTERIOR DOORS

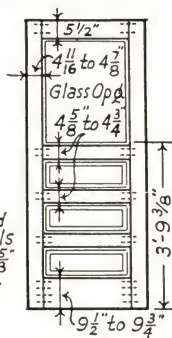
Manufactured in Ponderosa Pine with pine panels as shown on elevations. Moulded B&C, C&B or Ovolo sticking. Standard thickness of doors  $1\frac{5}{8}$ " or  $1\frac{11}{8}$ ".



TWO PANEL AND ONE LIGHT

### STANDARD SIZES

- |             |               |
|-------------|---------------|
| 2' 6"x6' 6" | 2' 10"x6' 10" |
| 2' 8"x6' 8" | 2' 8"x7' 0"   |
| 3' 0"x6' 8" | 3' 0"x7' 0"   |

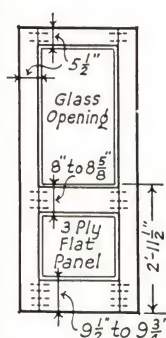


THREE PANEL AND ONE LIGHT

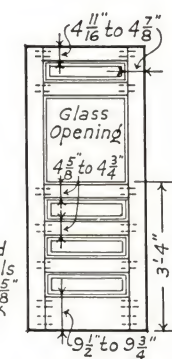
### GLASS DIVISIONS

All glass openings in exterior doors can be divided into smaller lights as desired. Usual divisions are:

- 3 lights wide
- 4 lights (2 wide—2 high)
- 6 lights (3 wide—2 high)
- 9 lights (3 wide—3 high)



ONE PANEL AND ONE LIGHT



FOUR PANEL AND ONE LIGHT

## CASEMENT DOORS

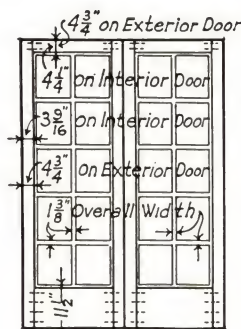
### TEN OR FIFTEEN LIGHT CASEMENT DESIGN

Manufactured in Ponderosa Pine with glass as desired. Moulded B&C, C&B, O.G., or Ovolo sticking. Standard thickness of doors  $1\frac{5}{8}$ " and  $1\frac{11}{8}$ ".

Interior Casement Doors are also made in any hardwood with veneered stiles and rails and solid division bars.

### STANDARD SIZES

- 4'-0" opening, 2'-0"x6'-8" or 2'-0"x7'-0"
- 4'-8" opening, 2'-4"x6'-8" or 2'-4"x7'-0"
- 5'-0" opening, 2'-6"x6'-8" or 2'-6"x7'-0"
- 5'-0" opening, 2'-8"x6'-8" or 2'-8"x7'-0"



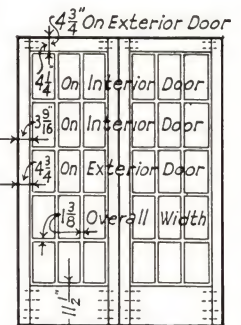
TEN LIGHT DESIGN

### CASEMENT DESIGNS

Casement doors can also be divided into:

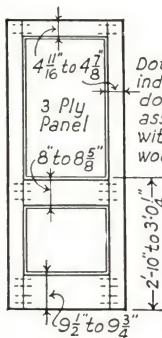
- 8 lights (2 wide—4 high) and
- 12 lights (3 wide—4 high).

Pairs of casement doors in openings less than 5'-0" wide have  $3\frac{5}{8}$ " stiles as shown while pairs in openings 5'-0" wide and wider have  $4\frac{1}{4}$ " stiles.

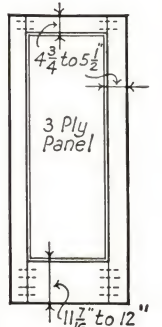


FIFTEEN LIGHT DESIGN

## INTERIOR DOORS



TWO PANEL



ONE PANEL

Lock rail heights, width of stiles, and width of rails as noted on all elevations are minimum and maximum dimensions as used by the various manufacturers.

### STANDARD SIZES OF ONE, TWO, AND SIX PANEL DOORS

- |                               |                                 |
|-------------------------------|---------------------------------|
| 2'-0"x6'-0", $1\frac{3}{8}$ " | 2'-10"x6'-10", $1\frac{3}{8}$ " |
| 2'-0"x6'-6", $1\frac{3}{8}$ " | 3'-0"x6'-8", $1\frac{3}{8}$ "   |
| 2'-0"x6'-8", $1\frac{3}{8}$ " | 3'-0"x7'-0", $1\frac{3}{8}$ "   |
| 2'-0"x7'-0", $1\frac{3}{8}$ " | 2'-6"x6'-6", $1\frac{3}{4}$ "   |
| 2'-4"x6'-6", $1\frac{3}{8}$ " | 2'-6"x6'-8", $1\frac{3}{4}$ "   |
| 2'-4"x6'-8", $1\frac{3}{8}$ " | 2'-6"x7'-0", $1\frac{3}{4}$ "   |
| 2'-6"x6'-6", $1\frac{3}{8}$ " | 2'-8"x6'-8", $1\frac{3}{4}$ "   |
| 2'-6"x6'-8", $1\frac{3}{8}$ " | 2'-8"x7'-0", $1\frac{3}{4}$ "   |
| 2'-6"x7'-0", $1\frac{3}{8}$ " | 2'-10"x6'-10", $1\frac{3}{4}$ " |
| 2'-8"x6'-8", $1\frac{3}{8}$ " | 3'-0"x6'-8", $1\frac{3}{4}$ "   |
| 2'-8"x7'-0", $1\frac{3}{8}$ " | 3'-0"x7'-0", $1\frac{3}{4}$ "   |

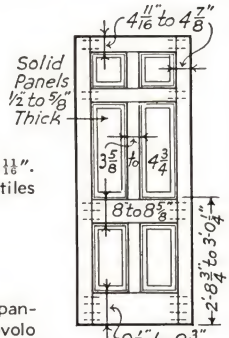
### ONE AND TWO PANEL DESIGNS

Manufactured in Ponderosa Pine with laminated flat panels of pine, fir, gum, or birch. Moulded C&B, B&C or Ovolo Sticking. Standard thickness of doors  $1\frac{5}{8}$ " or  $1\frac{11}{8}$ ". Made also in any Hardwood with veneered stiles, rails and panels.

## INTERIOR DOORS

### SIX PANEL DESIGN

Manufactured in Ponderosa Pine with raised panels of solid pine. Moulded B&C, C&B, or Ovolo Sticking. Panels  $\frac{1}{2}$ " thick. Standard thickness of doors  $1\frac{5}{8}$ ",  $1\frac{11}{8}$ ", or  $1\frac{13}{8}$ ". Made also in any Hardwood with veneered stiles and rails, and flat veneered panels.



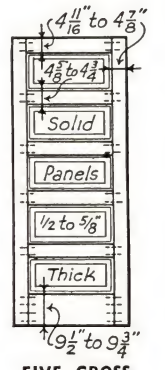
SIX PANEL

### FIVE CROSS PANEL DESIGN

Manufactured in Ponderosa Pine with raised panels of solid pine. Moulded OG, C&B, or Ovolo Sticking. Standard thickness of doors  $1\frac{5}{8}$ ",  $1\frac{11}{8}$ ", or  $1\frac{13}{8}$ ". Panels  $\frac{1}{2}$ " thick.

### STANDARD SIZES OF FIVE PANEL DESIGN

- |                               |                                 |
|-------------------------------|---------------------------------|
| 2'-0"x6'-0", $1\frac{1}{8}$ " | 2'-6"x7'-0", $1\frac{3}{8}$ "   |
| 2'-0"x6'-8", $1\frac{1}{8}$ " | 2'-8"x6'-8", $1\frac{3}{8}$ "   |
| 2'-4"x6'-8", $1\frac{1}{8}$ " | 2'-8"x7'-0", $1\frac{3}{8}$ "   |
| 2'-6"x6'-6", $1\frac{1}{8}$ " | 2'-10"x6'-10", $1\frac{3}{8}$ " |
| 2'-6"x6'-8", $1\frac{1}{8}$ " | 3'-0"x6'-8", $1\frac{3}{8}$ "   |
| 2'-8"x6'-8", $1\frac{1}{8}$ " | 3'-0"x7'-0", $1\frac{3}{8}$ "   |
| 2'-0"x6'-0", $1\frac{3}{8}$ " | 2'-6"x6'-6", $1\frac{3}{4}$ "   |
| 2'-0"x6'-6", $1\frac{3}{8}$ " | 2'-6"x6'-8", $1\frac{3}{4}$ "   |
| 2'-0"x6'-8", $1\frac{3}{8}$ " | 2'-6"x7'-0", $1\frac{3}{4}$ "   |
| 2'-0"x7'-0", $1\frac{3}{8}$ " | 2'-8"x6'-8", $1\frac{3}{4}$ "   |
| 2'-4"x6'-6", $1\frac{3}{8}$ " | 2'-8"x7'-0", $1\frac{3}{4}$ "   |
| 2'-4"x6'-8", $1\frac{3}{8}$ " | 2'-10"x6'-10", $1\frac{3}{4}$ " |
| 2'-6"x6'-6", $1\frac{3}{8}$ " | 3'-0"x6'-8", $1\frac{3}{4}$ "   |
| 2'-6"x6'-8", $1\frac{3}{8}$ " | 3'-0"x7'-0", $1\frac{3}{4}$ "   |



FIVE CROSS PANEL



# Specifications

## STOCK VENEERED DOORS

**NOTE:** Notes are explanatory or advisory only and should not be included in the specifications.

**NOTE:** Select and include only those clauses which apply to the particular work. Words within brackets in italics are selective.

### (1) MATERIAL AND CONSTRUCTION

**(1a) GENERAL**—All doors shall be of size and design as called for on plans (*and details*) constructed in accordance with the standard details of the National Door Manufacturers Association, Inc.

**(1a1)** All doors shall be constructed of thoroughly seasoned material redried by the door manufacturer before assembly to a proper, uniform moisture content suitable for the climate in which they are to be used.

**(1b) GLUE AND GLUING**—Glue for all fabrication shall be high grade vegetable glue or water resisting casein glue equally distributed over the surfaces and applied under pressure before "chilling."

**(1c) CORES**—All cores shall be constructed of soft pine blocks not over 2 inches wide on the face with end joints in adjacent rows well staggered.

**(1c1)** Outer exposed edges of all stiles and rails shall be finished with a  $\frac{3}{4}$  inch thick strip of same wood as face veneer wood.

**(1c2)** Cores, after gluing, shall be planed smooth to a uniform thickness.

**(1d) SANDING**—Faces of all doors shall be smoothly machine sanded with "00" sandpaper.

### (2) INTERIOR STILE AND RAIL DOORS

**(2a)** All cores for stiles and rails shall be finished on panel edges with a  $\frac{3}{4}$  inch thick strip of face veneer wood.

**(2b)** Stiles and rails shall have (*specify type*) solid sticking.

**(2c)** Furnish glass stops (*and muntins*) of face veneer wood.

**(2d)** Face veneers for stiles and rails shall be of (*specify wood*)  $\frac{1}{8}$  inch thick before sanding.

**(2e)** Panels shall be of (*three*) (*five*) ply veneer faced with (*specify wood*) veneer of standard commercial thickness. Grains of the various plies shall alternate in direction.

**(2f)** All stiles and rails shall be assembled with hard wood dowels not less than  $\frac{1}{2}$  inch in diameter by 5 inches long. On rails 6 inches or less in width, there shall be two dowels with one additional dowel for each additional 3 inches in width or fraction thereof. All joints shall be well cope fitted and all moulded edges smoothly machined.

### (3) INTERIOR FLUSH VENEER DOORS

**(3a)** At the option of the manufacturer, the core shall be constructed of vertical blocks not over 2 inches wide on the face, well glued together with joints staggered and surrounded with  $\frac{3}{4}$  inch hardwood edge strip on all four edges; or shall be constructed of stile, rail and panel units, each unit made up entirely of blocks with  $\frac{3}{4}$  inch edge strips on the exposed edges of stiles and rails.

**(3b)** In lieu of  $\frac{3}{4}$  inch hardwood top and bottom edge strips, the tops and bottoms of the doors shall be given two coats of paint or varnish before leaving the factory.

**(3c)** Horizontal crossbanding shall be  $\frac{1}{8}$  inch thick or thicker before sanding. Face veneers shall be ( $\frac{1}{8}$ ) ( $\frac{1}{4}$ ) inch thick before sanding (*specify wood*).

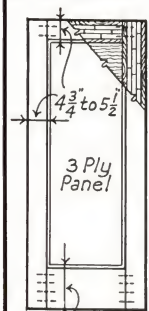
### (4) EXTERIOR DOORS

Exterior (*stile and rail*) (*flush veneer*) doors shall be made in accordance with specifications for interior doors except that all glue, throughout, shall be water resisting casein glue and (*stile and rail*) face veneers shall be  $\frac{1}{4}$  inch thick, before sanding.

## SHORT FORM

All stock (*stile and rail*) (*flush veneer*) doors shall be made of sizes and design as called for on plans (*and details*) in accordance with the standard specifications of the National Door Manufacturers Association, Inc. as filed in Sweet's Catalog File—Architectural.

## CONSTRUCTION DETAILS



ONE PANEL

### INTERIOR DOORS VENEERED CONSTRUCTION

#### ONE PANEL VENEERED DESIGN

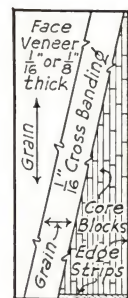
Manufactured in any hardwood with veneered flat panels. Moulded CGB, BGC, or Ovolo Sticking. Face veneers on stiles and rails  $\frac{1}{8}$ " thick before sanding. Core blocks not to exceed 2" in width. Standard thickness of doors  $1\frac{1}{8}$ " or  $1\frac{1}{4}$ ". Similar construction used for veneered two panel and six panel doors.

#### STANDARD SIZES FOR VENEERED AND FLUSH TYPE DOORS

2'-4" x 6'-8"	2'-6" x 6'-6"	2'-8" x 6'-8"	3'-0" x 6'-8"
2'-4" x 7'-0"	2'-6" x 6'-8"	2'-8" x 7'-0"	3'-0" x 7'-0"
	2'-6" x 7'-0"		

#### FLUSH TYPE DESIGN

Manufactured with softwood built-up core, horizontal crossbanding  $\frac{1}{8}$ " thick, with face veneer and edge strips of any hardwood. Face veneers  $\frac{1}{8}$ " thick before sanding. Standard thickness of doors  $1\frac{1}{8}$ " or  $1\frac{1}{4}$ ". Permissible to use face veneer  $\frac{1}{8}$ " thick, also  $\frac{1}{8}$ " crossbanding. Optional with manufacturer to furnish core made as shown or made up of core block stile, rail and panel units doweled together to make a flush core.



FLUSH TYPE



# GRADING RULES

## PINE SASH DOORS and FRAMES

### GENERAL INSTRUCTIONS

The purpose of grades is to maintain a standard or measure of value among factories manufacturing similar products which will permit the buyer to obtain products of approximately the same utility regardless of the factory from which they are shipped. No hard and fast rules can be made without some latitude in the matter of application, and practical common sense must govern to some extent. A shipment of any grade must consist of a fair proportion of the better and the poorer types and, as a whole, be representative of the grade.

Grades as described under this head are applicable to Pine products only and should not be confused with grading rules applying to other woods.

### PINE FRAMES

**GRADE "A"**—Material in Grade "A" Frames shall be practically free from defects in all exposed parts. White sap, light brown water stain, and light red kiln burn are not considered defects. Parts that are not exposed when Frame is in place may contain stain, pitch streaks, sound knots, or any other sound defects that will not affect the strength of the Frame.

Workmanship must be good.

### PINE HOUSE DOORS

**NO. 1 QUALITY**—Material in No. 1 doors shall be practically free from defects. White sap, light brown water stain, and light red kiln burn are not considered defects. Also one (1) carefully repaired pitch seam not over 2½ inches in length is permissible in each stile or bottom rail.

Workmanship must be good.

**LAMINATED PANEL DOORS**—Panels shall have two good faces practically free from defects and may contain not to exceed 25% pieced faces. Inconspicuous patches shall be admitted.

**NO. 2 QUALITY**—Material in No. 2 doors may contain light blue stain, medium brown water stain, or medium red kiln burn showing on not to exceed 50% of the area of any piece. Also pitch streaks, checks, pitch pockets, if carefully slivered, tight sound knots not to exceed ⅝ inch in diameter, and other

defects, not one of which shall be more serious in nature than the defects already enumerated. Each stile must contain one (1) such defect, but no piece shall contain more than two (2), and no door shall contain more than eight (8) such defects on each side.

Plugs admitted but regarded as defects.

Slight defects in workmanship admitted.

**LAMINATED PANEL DOORS**—Panels may contain slight stains and discolorations. Any amount of unmatched pieced faces permissible. Inconspicuous patches shall be admitted.

**NO. 3 QUALITY**—Material for No. 3 doors may contain all blue stain, brown water stain, or red kiln burn; also worm holes, checks, pitch streaks, pitch pockets, fine shake, tight sound knots not to exceed 1½ inches in diameter, and other defects, not one of which shall be more serious in nature than defects already enumerated. Each stile must contain two (2) such defects, but no piece shall contain more than four (4) and no door shall contain more than twenty (20) such defects on each side.

Plugs admitted but regarded as defects.

Slight defects in workmanship admitted.

**LAMINATED PANEL DOORS**—Panels may contain medium to heavy stains and discolorations, also pin knots, and other equivalent defects. Any amount of unmatched pieced faces and any number of patches permissible.

### PINE GARAGE DOORS

Pine Garage Doors shall be graded according to Pine House Door rules as shown above except mill-run grade which may contain blue stain, brown water stain, or red kiln burn, checks, pitch streaks, pitch pockets, fine shake, tight sound knots not to exceed 2 inches in diameter and other defects, none of which shall be more serious in nature than defects already enumerated.

### PINE OPEN SASH AND WINDOWS

Material in No. 1 Sash and Windows shall be practically free from defects. White sap, light brown water stain, and light red kiln burn are not considered defects.

Workmanship must be good.

### VENEERED DOOR GUARANTEE

Veneered doors produced by members of the National Door Manufacturers Ass'n, Inc. are guaranteed by the manufacturer to be of good material and workmanship, free from defects which render them unserviceable or unfit for the use for which they are intended. (A warp or twist of not to exceed ¼ inch shall not be considered a defect in a veneered Flush Door.) Natural variations in the color or texture of the wood are not to be considered as defects.

Veneered doors must be accorded reasonable treatment by the purchaser and must not be stored in damp warehouses or placed

in moist or freshly plastered buildings, or subjected to abnormal heat or dryness, as manufacturer will not assume responsibility for defects resulting from these causes. Top and bottom edges of all doors must be thoroughly painted or varnished to prevent absorption of moisture.

Doors must be inspected upon arrival and all claims or complaints must be filed before painter's finish is applied.

The manufacturer agrees to repair or replace in the white, without charge, any door found to be defective within the meaning of this guarantee.



# ROSTER of MEMBERS

• • •

## NATIONAL DOOR MANUFACTURERS ASSOCIATION, INC.

CHICAGO, ILL. • • • WASHINGTON, D. C.

Andersen Corporation . . . . .	Bayport, Minn.
Anson & Gilkey Company . . . . .	Merrill, Wis.
Biles-Coleman Lumber Company . . . . .	Omak, Wash.
Carr, Ryder & Adams Company . . . . .	Dubuque, Iowa
Crowley Millwork Company . . . . .	Spokane, Wash.
Curtis Brothers & Company . . . . .	Clinton, Iowa
Curtis & Yale Company . . . . .	Wausau, Wis.
Deer Park Lumber Company . . . . .	Deer Park, Wash.
Farley & Loetscher Manufacturing Company . . . . .	Dubuque, Iowa
Hardwood Products Corporation . . . . .	Neenah, Wis.
Huttig Manufacturing Company . . . . .	Muscatine, Iowa
Ideal Company . . . . .	Waco, Tex.
Kinzua Pine Mills . . . . .	Kinzua, Ore.
The Long-Bell Lumber Company . . . . .	Kansas City, Mo.
The R. McMillen Company . . . . .	Oshkosh, Wis.
Missoula White Pine Sash Company . . . . .	Missoula, Mont.
Morgan Company . . . . .	Oshkosh, Wis.
Northern Sash & Door Company . . . . .	Hawkins, Wis.
Roach & Musser Company . . . . .	Muscatine, Iowa
Rock Island Sash & Door Works . . . . .	Rock Island, Ill.
Roddis Lumber and Veneer Company . . . . .	Marshfield, Wis.
Spokane Pine Products Company . . . . .	Spokane, Wash.
Western Pine Manufacturing Co., Ltd. . . . .	Spokane, Wash.
White Pine Sash Company . . . . .	Spokane, Wash.